AMENDMENTS TO THE CLAIMS

Claims 1-13 are (Withdrawn)

14. (original) An optical pickup for recording or reproducing information with respect to a first recording medium having a light transmissive layer of a thickness t1 on an information recording face, the optical pickup recording or reproducing information by forming a first light spot on the information recording face by focusing a first light beam of a wavelength $\lambda 1$ on the information recording face,

said optical pickup comprising:

a diffraction optical element including a diffracting face and a refracting face for diffracting and refracting the first light beam so as to emit the first light beam;

an objective lens for causing a diffracted ray of a predetermined diffraction order of the first light beam emitted from the diffraction optical element to focus on the information recording face of the first recording medium so as to form the first light spot; and

a collimator lens, provided between the first light source and the diffraction optical element, for causing the first light beam from the first light source to be incident on the diffraction optical element as a parallel ray,

the diffracting face of the diffraction optical element having such a diffraction characteristic that the first light beam is diffracted toward an optical axis, and the refracting face being a concave face.

15. (original) The optical pickup as set forth in claim 14, wherein the diffraction optical element satisfies

$$\Phi = \Phi_D + \Phi_L = 0$$

where Φ is a power of the diffraction optical element, Φ_D is a power of the diffracting face of the diffraction optical element, and Φ_L is a power of the refracting face of the diffraction optical element.

Claims 16-20 are withdrawn.

21. (currently amended) An optical pickup for recording or reproducing information with respect to first, second, and third recording media having information recording faces and light transmissive layers, the light transmissive layers of the first, second, and third recording media being formed on the respective information recording faces and respectively having thicknesses t1, t2, and t3, which are related to one another by $t1 < t2 < t3$, the optical pickup recording or reproducing information by focusing first, second, and third light beams of wavelengths $\lambda1$, $\lambda2$, and $\lambda3$, which are related to one another by $\lambda1 < \lambda2 < \lambda3$, on the respective information recording faces,

said optical pickup comprising:

an objective lens, movable in a substantially orthogonal direction with respect to respective optical axes of the first, second, and third light beams, for ~~focusing~~tracking the first, second, and third light beams on the respective information recording faces of the first, second, and third recording media; and

a diffraction optical element, provided on an incident side of the first, second, and third light beams and movable with the objective lens, for diffracting and refracting the first, second, and third light beams so as to cause

the first, second, and third light beams to be incident on the objective lens as diffracted rays of predetermined diffraction orders,

said diffraction optical element causing the second and third light beams to be incident on the objective lens as diverging rays, and

said diffraction optical element satisfying

$|\Phi inr| < |\Phi outr|$, and $|\Phi inIr| < |\Phi outIr|$

where Φinr and $\Phi inIr$ are degrees of convergence and/or divergence of incident rays of the second and third light beams, respectively, on the diffraction optical element, and $\Phi outr$ and $\Phi outIr$ are degrees of convergence and/or divergence of incident rays of the second and third light beams, respectively, on the objective lens, and

where the third light beam is incident on the diffraction optical element as a diverging ray.

22. (original) The optical pickup as set forth in claim 21, wherein the diffraction optical element causes the first light beam to be incident on the objective lens as a parallel ray.

23. (original) The optical pickup as set forth in claim 21, wherein the diffraction optical element causes the first, second, and third light beams to be incident on the objective lens as a second order diffracted ray, a first order diffracted ray, and a first order diffracted ray, respectively,

the diffraction optical element having highest diffraction efficiency for the second order diffracted ray of the first light beam, for the first order diffracted ray of the second light beam, and for the first order diffracted ray of the third light beam.

24. (original) The optical pickup as set forth in claim 23, wherein the diffraction optical element has diffraction efficiency of 90% or greater for the second order diffracted ray of the first light beam.

25. (original) The optical pickup as set forth in claim 23, wherein the third light beam is incident on the diffraction optical element as a diverging ray.

26. (original) The optical pickup as set forth in claim 25, wherein the first and second light beams are incident on the diffraction optical element as a parallel ray and a diverging ray, respectively.

27. (currently amended) The optical pickup as set forth in claim 26, wherein the first, second, and third light beams are incident on the diffraction optical element with degrees of convergence and/or divergence that satisfy

$0 \leq \varphi \times \Phi inb \leq 0.11$

$-0.048 \leq \varphi \times \Phi inr \leq 0.04$

$-0.18 \leq \varphi \times \Phi inIr \leq -0.1$

where φ is an effective diameter of the objective lens for the first light beam and Φinb represents a degree of convergence and/or divergence of the first light beam incident on the diffraction optical element.

28. (currently amended) The optical pickup as set forth in claim 26, wherein the diffraction optical element satisfies

$-0.11 \leq \varphi \times \Phi b \leq 0$

$$-0.2 \leq \varphi \times \Phi r \leq -0.002$$

$$-0.16 \leq \varphi \times \Phi Ir \leq 0.03$$

where Φb, Φr, ΦIr are powers of the diffraction optical element for the first, second, and third light beams, respectively and Φ represents an effective diameter of the objective lens for the first light beam.

Claims 29-31 are withdrawn.

32. The optical pickup as set forth in claim 23, wherein the diffraction optical element includes a diverging diffracting face and a concave refracting face.

33. The optical pickup as set forth in claim 23, wherein the diffraction optical element has a spherical refracting face.

34. The optical pickup as set forth in claim 23, wherein the diffraction optical element has a refracting face whose power is not less than –0.1 for the first light beam.

Claims 35-51 are withdrawn.